Memorandum

WESTON MANAGERS DESIGNERS/CONSULTANTS 07-0069

SDMS 268519

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FROM: Joel Lindsay
DATE: August 27, 2001
PROJECT: Pittsfield SSERC – TO1
W.O. NO.: 20121.001.103

SUBJECT: Supplemental Sampling Report
Aggrading Bar and Additional Bank Samples
DCN: GE-082701-AAQA

This memorandum has been prepared to present analytical results and data analysis for soil and sediment samples collected from selected points along the bank between Station 512+00 and Station 516+00, and at an aggrading bar on the eastern side of the river channel extending from Station 508+00 to 510+00 of the 1st Phase area of the 1.5 Mile Reach. Field sampling activities were conducted on May 7 and 8, 2001. This memorandum includes descriptions of the following:

- Purpose and objectives
- Field sampling procedures and description
- Laboratory analytical procedures
- Analytical results
- Summary

The activities described in this plan were conducted in accordance with project-wide and area specific planning documents. These planning documents include the following:

- Project Field Sampling Plan (00-0334)
- Project Quality Assurance Project Plan and Addendum (QAPP) (00-0305)
- Project Health and Safety Plan (HASP) (00-0313)
- Site Specific Health and Safety Plan (00-0475)

Purpose and Objectives

The purpose of this investigation was to supplement existing riverbank soil and sediment data for the 1st Phase area of the 1.5 Mile Reach. The investigation had the following objectives:

1. Further assess PCB concentrations in riverbank soils at an approximate elevation of 977 to 978, to determine if the limit of excavation on the west bank between Stations 512+00 and 516+00 could be lowered from its current placement at approximately elevation 980. At each transect, sample locations were placed approximately midway between the original EE/CA top of bank samples and the recently obtained samples at approximately 980-foot elevation contour.

2. Further assess PCB concentrations at depth in the subject aggrading bar to allow determination of whether the excavation limit should be extended below 2 feet in this area.

Sampling Locations

The attached figure depicts the locations of the samples collected as part of this effort. Locations BS000168 through BS000172 are located approximately along the 977 to 978-foot elevation contour at pre-existing transects 88, 90, 92, 94, and 96. Transect 88 corresponds to Station 512+00, and transect 96 corresponds to Station 516+00.

Locations SE001381 and SE001382 were located within the aggrading bar area which covers approximately the eastern third of the river channel and extends from approximately Station 508+00 to Station 510+00.

Field Sampling and Analytical Procedures

Soil sampling at the bank locations was conducted at pre-determined locations on existing transects as described above (see figure). Bank samples were collected from the following depth intervals:

- 0 to 1 ft bgs
- 1 to 2 ft bgs
- 2 to 3 ft bgs

Aggrading bar sediment samples were collected at 6" intervals from a depth of 2-feet to 5-feet.

Sampling protocols were conducted in accordance with the WESTON Field Sampling Plan (12 Mar 1999) for soil sampling (C.32) and sediment sampling (C.30). All sample locations were marked by the field sampling team using survey hub stakes and pin flags, and located with a GPS unit.

All soil and sediment samples were analyzed for PCBs at a fixed, off-site laboratory approved by CENAE. QA/QC samples were obtained in accordance with the requirements outlined in the project QAPP and Addendum (00-0305). WESTON conducted data management and data

validation of sample analyses in accordance with the procedures outlined in the project QAPP. All analyses were found to meet the Level III data quality objectives as outlined in the project QAPP.

Analytical Results

A total of 29 samples were analyzed for Aroclors and total PCBs. Tables 1 (river bank) and 2 (aggrading bar sediment) show the validated analytical results for all samples. The following was noted:

- Total PCB concentrations in the bank soil samples ranged from 3.1 ppm to 180 ppm. The overall arithmetic average PCB concentration for all the bank soil samples was 58.4 ppm. The 95% UCL for all the samples was calculated to be 180 ppm. The arithmetic average total PCB concentrations within each sample location ranged from 21.0 ppm to 92.3 ppm. Concentrations typically decreased somewhat with depth.

- Total PCB concentrations in the aggrading bar samples showed a marked decrease below the 4-foot depth interval. For sample SE001381, the average total PCB concentration between 2 and 4 feet depth was 28.5 ppm, while the total PCB concentrations from 4-5 feet depth were below 1 ppm. For sample SE001382, the average total PCB concentration between 2 and 4 feet depth was 23.8 ppm, while the total PCB concentrations from 4-5 feet depth were non-detectable.

Summary

Riverbank Samples

Additional bank soil samples were obtained on the west bank of the river between Stations 512+00 and 516+00 at previously existing transects 88, 90, 92, 94, and 96. At these transects, sample locations were placed at an elevation of approximately 977 to 978 feet so as to obtain bank soil data at locations midway between the original EE/CA top of bank samples and recently obtained bank samples along the 980 foot elevation contour. Samples were obtained at each location at depths of 0-1 foot, 1-2 feet, and 2-3 feet. Total PCB sample results from all of the new samples are well above the applicable cleanup criteria for recreational bank soils of 10 ppm compared to both the arithmetic average and the 95% UCL. Therefore, the limit of excavation shall extend up to approximately the 980-foot contour.

Aggrading Bar Samples

Two sample points were located on an existing aggrading bar located within the eastern third of the river channel between Stations 508+00 and 510+00. Samples were obtained at 6" intervals from depths of 2-5 feet to allow assessment of the possible need to excavate below the 2-foot excavation depth for the river channel in this area. Average total PCB concentrations in both samples for the

depth interval of 2-4 feet were between 20 and 30 ppm. Below 4 feet, total PCB levels decreased to below 1 ppm or non-detectable. Therefore, the excavation of sediment in this aggrading bar will be increased to four feet in depth.

TABLE 1

Bank Soil Samples

C-of-C ID	RFW0002540	RFW0002540	RFW0002540	RFW0002540	RFW0002540
C-of-C Item	1	2	3	4	5
Field Sample ID	H2-BS000168-0-0000	H2-BS000168-0-0010	H2-BS000168-1-0010	H2-BS000168-0-0020	H2-BS000169-0-0000
Date Collected	05/07/2001	05/07/2001	05/07/2001	05/07/2001	05/07/2001
Depth	0.0-1.0	1.0-2.0	1.0-2.0	2.0-3.0	0.0-1.0
Source	EPA_COE	EPA_COE	EPA_COE	EPA_COE	EPA_COE
Analyte					
INORGANICS					
PERCENT SOLIDS (%)	**80.0 (10)**	**75.7 (10)**	**73.9 (10)**	**73.2 (10)**	**69.4 (10)**
PCBS					
AROCLOR-1016 (ug/kg)	4200 U (10)	440 U (10)	450 U (10)	230 U (10)	7200 U (10)
AROCLOR-1221 (ug/kg)	4200 U (10)	440 U (10)	450 U (10)	230 U (10)	7200 U (10)
AROCLOR-1232 (ug/kg)	4200 U (10)	440 U (10)	450 U (10)	230 U (10)	7200 U (10)
AROCLOR-1242 (ug/kg)	4200 U (10)	440 U (10)	450 U (10)	230 U (10)	7200 U (10)
AROCLOR-1248 (ug/kg)	4200 U (10)	440 U (10)	450 U (10)	230 U (10)	7200 U (10)
AROCLOR-1254 (ug/kg)	**19000 J (10)**	**2800 J (10)**	**2500 J (10)**	**1100 J (10)**	**52000 J (10)**
AROCLOR-1260 (ug/kg)	**34000 J (10)**	**4500 J (10)**	**3900 J (10)**	**2000 J (10)**	**77000 J (10)**
PCB, TOTAL (ug/kg)	**53000 J (10)**	**7300 J (10)**	**6400 J (10)**	**3100 J (10)**	**130000 J (10)**

(10) = validated result; unreleased
J = estimated value
U = not detected; detection limit shown

TABLE 1

Bank Soil Samples

C-of-C ID	RFW0002540	RFW0002540	RFW0002540	RFW0002540	RFW0002540
C-of-C Item	6	7	8	9	10
Field Sample ID	H2-BS000169-0-0010	H2-BS000169-0-0020	H2-BS000170-0-0000	H2-BS000170-0-0010	H2-BS000170-0-0020
Date Collected	05/07/2001	05/07/2001	05/07/2001	05/07/2001	05/07/2001
Depth	1.0-2.0	2.0-3.0	0.0-1.0	1.0-2.0	2.0-3.0
Source	EPA COE	EPA COE	EPA COE	EPA COE	EPA COE
Analyte					
INORGANICS					
PERCENT SOLIDS (%)	**70.5 (10)**	**76.5 (10)**	**77.7 (10)**	**72.9 (10)**	**73.6 (10)**
PCBS					
AROCLOR-1016 (ug/kg)	4700 U (10)	1100 U (10)	11000 U (10)	4600 U (10)	450 U (10)
AROCLOR-1221 (ug/kg)	4700 U (10)	1100 U (10)	11000 U (10)	4600 U (10)	450 U (10)
AROCLOR-1232 (ug/kg)	4700 U (10)	1100 U (10)	11000 U (10)	4600 U (10)	450 U (10)
AROCLOR-1242 (ug/kg)	4700 U (10)	1100 U (10)	11000 U (10)	4600 U (10)	450 U (10)
AROCLOR-1248 (ug/kg)	4700 U (10)	1100 U (10)	11000 U (10)	4600 U (10)	450 U (10)
AROCLOR-1254 (ug/kg)	**22000 J (10)**	**7800 J (10)**	**62000 J (10)**	**26000 J (10)**	**3700 J (10)**
AROCLOR-1260 (ug/kg)	**33000 J (10)**	**12000 J (10)**	**120000 J (10)**	**28000 J (10)**	**5200 J (10)**
PCB, TOTAL (ug/kg)	**55000 J (10)**	**20000 J (10)**	**180000 J (10)**	**54000 J (10)**	**8900 J (10)**

(10) = validated result; unreleased
J = estimated value
U = not detected; detection limit shown

TABLE 1

Bank Soil Samples

C-of-C ID	RFW0002540	RFW0002540	RFW0002540	RFW0002540	RFW0002540
C-of-C Item	11	12	13	14	15
Field Sample ID	H2-BS000171-0-0000	H2-BS000171-0-0010	H2-BS000171-0-0020	H2-BS000172-0-0000	H2-BS000172-0-0010
Date Collected	05/07/2001	05/07/2001	05/07/2001	05/07/2001	05/07/2001
Depth	0.0-1.0	1.0-2.0	2.0-3.0	0.0-1.0	1.0-2.0
Source	EPA_COE	EPA_COE	EPA_COE	EPA_COE	EPA_COE
Analyte					
INORGANICS					
PERCENT SOLIDS (%)	**74.2 (10)**	**75.6 (10)**	**86.7 (10)**	**80.7 (10)**	**84.9 (10)**
PCBS					
AROCLOR-1016 (ug/kg)	4500 U (10)	6500 U (10)	9500 U (10)	6200 U (10)	390 U (10)
AROCLOR-1221 (ug/kg)	4500 U (10)	6500 U (10)	9500 U (10)	6200 U (10)	390 U (10)
AROCLOR-1232 (ug/kg)	4500 U (10)	6500 U (10)	9500 U (10)	6200 U (10)	390 U (10)
AROCLOR-1242 (ug/kg)	4500 U (10)	6500 U (10)	9500 U (10)	6200 U (10)	390 U (10)
AROCLOR-1248 (ug/kg)	4500 U (10)	6500 U (10)	9500 U (10)	6200 U (10)	390 U (10)
AROCLOR-1254 (ug/kg)	**60000 J (10)**	**27000 J (10)**	**64000 J (10)**	**29000 J (10)**	**2900 J (10)**
AROCLOR-1260 (ug/kg)	**46000 J (10)**	**50000 J (10)**	**26000 J (10)**	**49000 J (10)**	**4400 J (10)**
PCB, TOTAL (ug/kg)	**110000 J (10)**	**77000 J (10)**	**90000 J (10)**	**78000 J (10)**	**7300 J (10)**

(10) = validated result; unreleased
J = estimated value
U = not detected; detection limit shown

TABLE 1

Bank Soil Samples

C-of-C ID	RFW0002540
C-of-C Item	16
Field Sample ID	H2-BS000172-0-0020
Date Collected	05/07/2001
Depth	2.0-3.0
Source	EPA-COE
Analyte	
INORGANICS	
PERCENT SOLIDS (%)	**84.3 (10)**
PCBS	
AROCLOR-1016 (ug/kg)	200 U (10)
AROCLOR-1221 (ug/kg)	200 U (10)
AROCLOR-1232 (ug/kg)	200 U (10)
AROCLOR-1242 (ug/kg)	200 U (10)
AROCLOR-1248 (ug/kg)	200 U (10)
AROCLOR-1254 (ug/kg)	**1200 J (10)**
AROCLOR-1260 (ug/kg)	**1800 J (10)**
PCB, TOTAL (ug/kg)	**3000 J (10)**

(10) = validated result; unreleased
J = estimated value
U = not detected; detection limit shown

TABLE 2

Aggrading Bar Samples

C-of-C ID	RFW0002540	RFW0002540	RFW0002540	RFW0010049	RFW0010049
C-of-C Item	1	2	3	4	5
Field Sample ID	H2-SE001381-0-0020	H2-SE001381-0-0025	H2-SE001381-0-0030	H2-SE001381-0-0035	H2-SE001381-1-0035
Date Collected	05/08/2001	05/08/2001	05/08/2001	05/08/2001	05/08/2001
Depth	2.0-2.5	2.5-3.0	3.0-3.5	3.5-4.0	3.5-4.0
Source	EPA_COE	EPA_COE	EPA_COE	EPA_COE	EPA_COE
Analyte					
INORGANICS					
PERCENT SOLIDS (%)	**81.6 (10)**	**68.8 (10)**	**78.2 (10)**	**61.0 (2)**	**56.0 (2)**
PCBS					
AROCLOR-1016 (ug/kg)	1000 U (10)	1200 U (10)	4200 U (10)	540 U (2)	300 U (2)
AROCLOR-1221 (ug/kg)	1000 U (10)	1200 U (10)	4200 U (10)	540 U (2)	300 U (2)
AROCLOR-1232 (ug/kg)	1000 U (10)	1200 U (10)	4200 U (10)	540 U (2)	300 U (2)
AROCLOR-1242 (ug/kg)	1000 U (10)	1200 U (10)	4200 U (10)	540 U (2)	300 U (2)
AROCLOR-1248 (ug/kg)	1000 U (10)	1200 U (10)	4200 U (10)	540 U (2)	300 U (2)
AROCLOR-1254 (ug/kg)	**1500 J (10)**	**2500 J (10)**	**25000 J (10)**	**3700 J (2)**	**3200 J (2)**
AROCLOR-1260 (ug/kg)	**9900 J (10)**	**11000 J (10)**	**56000 J (10)**	**4600 J (2)**	**4000 J (2)**
PCB, TOTAL (ug/kg)	**11000 J (10)**	**14000 J (10)**	**81000 J (10)**	**8300 J (2)**	**7200 J (2)**

(2) = validated result; released
J = estimated value
U = not detected; detection limit shown

TABLE 2

Aggrading Bar Samples

C-of-C ID	RFW0010049	RFW0010049	RFW0010049	RFW0010049	RFW0010049
C-of-C Item	6	7	8	9	10
Field Sample ID	H2-SE001381-0-0040	H2-SE001381-0-0045	H2-SE001382-0-0020	H2-SE001382-0-0025	H2-SE001382-0-0030
Date Collected	05/08/2001	05/08/2001	05/08/2001	05/08/2001	05/08/2001
Depth	4.0-4.5	4.5-5.0	2.0-2.5	2.5-3.0	3.0-3.5
Source	EPA_COE	EPA_COE	EPA_COE	EPA_COE	EPA_COE
Analyte					
INORGANICS					
PERCENT SOLIDS (%)	**69.0 (2)**	**69.0 (2)**	**75.0 (2)**	**72.0 (2)**	**75.0 (2)**
PCBS					
AROCLOR-1016 (ug/kg)	24.0 U (2)	24.0 U (2)	2200 U (2)	4600 U (2)	660 U (2)
AROCLOR-1221 (ug/kg)	24.0 U (2)	24.0 U (2)	2200 U (2)	4600 U (2)	660 U (2)
AROCLOR-1232 (ug/kg)	24.0 U (2)	24.0 U (2)	2200 U (2)	4600 U (2)	660 U (2)
AROCLOR-1242 (ug/kg)	24.0 U (2)	24.0 U (2)	2200 U (2)	4600 U (2)	660 U (2)
AROCLOR-1248 (ug/kg)	24.0 U (2)	24.0 U (2)	2200 U (2)	4600 U (2)	660 U (2)
AROCLOR-1254 (ug/kg)	**94.0 J (2)**	**29.0 J (2)**	**5500 J (2)**	**7700 J (2)**	**1900 J (2)**
AROCLOR-1260 (ug/kg)	**130 J (2)**	**110 J (2)**	**19000 J (2)**	**52000 J (2)**	**8800 J (2)**
PCB, TOTAL (ug/kg)	**220 J (2)**	**140 J (2)**	**24000 J (2)**	**60000 J (2)**	**11000 J (2)**

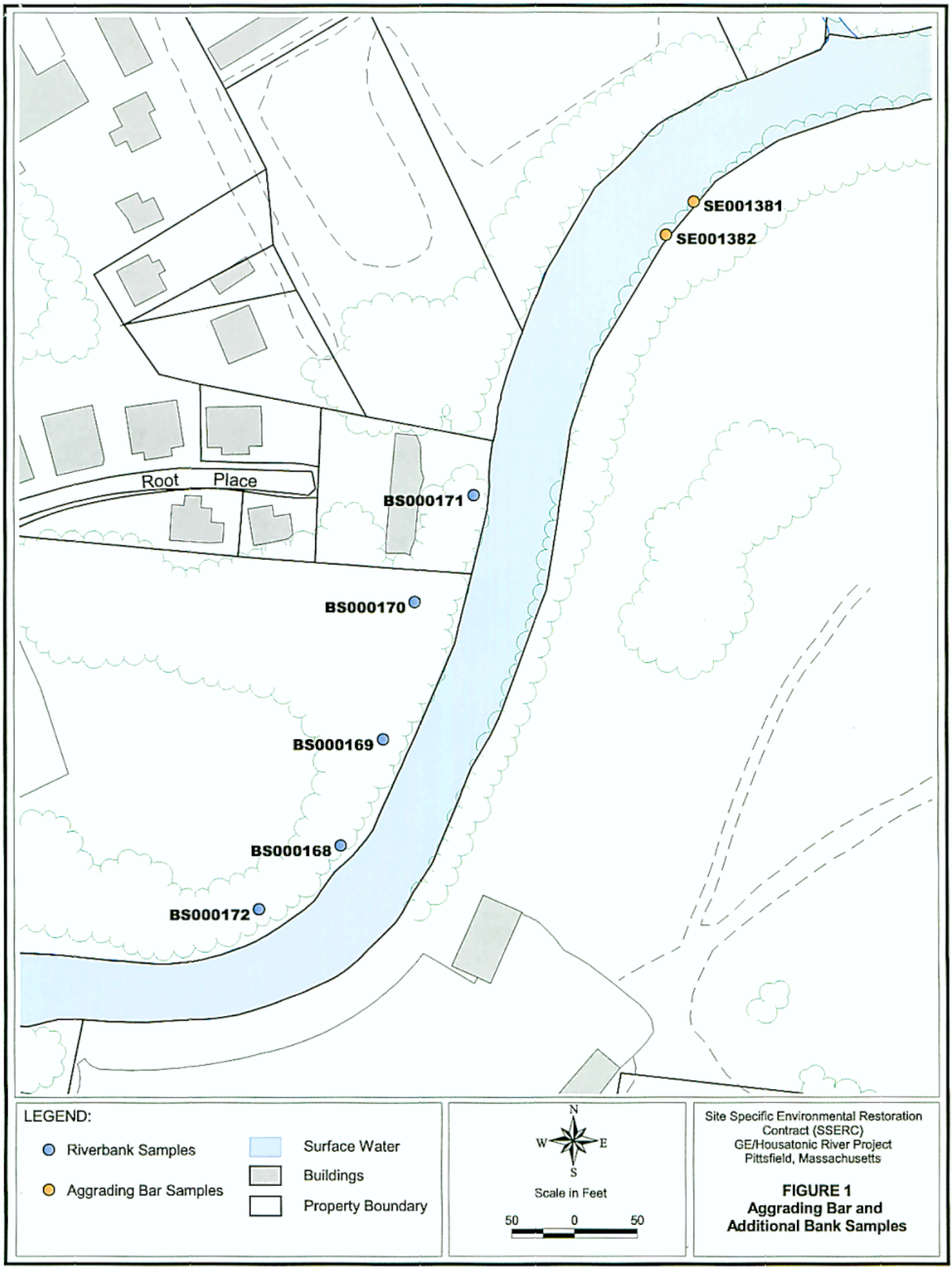
(2) = validated result; released
J = estimated value
U = not detected; detection limit shown

TABLE 2

Aggrading Bar Samples

C-of-C ID	RFW0010049	RFW0010049	RFW0010049
C-of-C Item	11	12	13
Field Sample ID	H2-SE001382-0-0035	H2-SE001382-0-0040	H2-SE001382-0-0045
Date Collected	05/08/2001	05/08/2001	05/08/2001
Depth	3.5-4.0	4.0-4.5	4.5-5.0
Source	EPA COE	EPA COE	EPA COE
Analyte			
INORGANICS			
PERCENT SOLIDS (%)	**74.0 (2)**	**81.0 (2)**	**86.0 (2)**
PCBS			
AROCLOR-1016 (ug/kg)	22.0 U (2)	20.0 U (2)	19.0 U (2)
AROCLOR-1221 (ug/kg)	22.0 U (2)	20.0 U (2)	19.0 U (2)
AROCLOR-1232 (ug/kg)	22.0 U (2)	20.0 U (2)	19.0 U (2)
AROCLOR-1242 (ug/kg)	22.0 U (2)	20.0 U (2)	19.0 U (2)
AROCLOR-1248 (ug/kg)	22.0 U (2)	20.0 U (2)	19.0 U (2)
AROCLOR-1254 (ug/kg)	**46.0 J (2)**	20.0 U (2)	19.0 U (2)
AROCLOR-1260 (ug/kg)	**250 J (2)**	20.0 U (2)	19.0 U (2)
PCB, TOTAL (ug/kg)	**300 J (2)**	20 U (2)	19 U (2)

(2) = validated result; released
J = estimated value
U = not detected; detection limit shown


SE001381
SE001382
Root Place
BS000171
BS000170
BS000169
BS000168
BS000172
LEGEND:
Riverbank Samples
Aggrading Bar Samples
Surface Water
Buildings
Property Boundary
N
W
E
S
Scale in Feet
50
0
50
Site Specific Environmental Restoration
Contract (SSERC)
GE/Housatonic River Project
Pittsfield, Massachusetts
FIGURE 1
Aggrading Bar and
Additional Bank Samples